

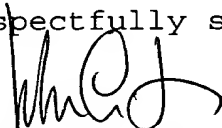
REMARKS

In response to the examiner's requirement for election of species, applicant elects the species of FIGS. 3a and 3b. Claims 1, 10 and 12-16 are readable on the elected species.

The amendments set forth above for the specification are presented in order to place the application in better condition for examination on the merits.

Applicant proposes that FIG. 5b of the drawings should be amended in the manner indicated in red in the accompanying copy thereof. The amendment is necessary in order to illustrate the orientation of the fin 32 relative to the circulating element 31 and the louvers 33. If the examiner approves of the amendment, suitable formal drawings incorporating the amendment will be filed in due course.

Respectfully submitted,



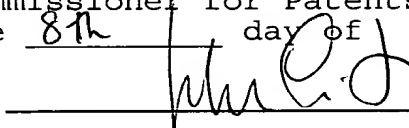
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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Per SANDBERG

Art Unit: 3743

Application No: 09/914,886

Examiner:
Leonard R. Leo

Filed: January 7, 2002

For: COOLING ELEMENT FOR A HEAT
EXCHANGER

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Rewrite the paragraph beginning on page 1, line 9, to read as follows:

In heat exchangers used in automotive industry for cooling a motor in a vehicle, a fin is generally made of a corrugated strip. The corrugated strip itself is made of copper, copper-based alloy or aluminium or aluminium-based alloy and this corrugated strip is installed between circulating elements where medium to be cooled is circulated. The corrugated strip has a strong metallic bond with these circulating elements of medium to be cooled. The metallic bond is made by a braze or a solder material. One corrugated strip creates many cooling elements, fins, between circulating elements and the fins are provided with louvers for improving heat transfer capacity. Further, the fins positioned between two circulating elements are installed substantially perpendicularly to the longitudinal direction of the fin strip. When these kind of fins are cut in the middle between the two circulating elements, each individual fin has a number of louvers twisted at an angle of 20 to 45 degrees and grouped together in even numbers of different areas. Every odd area has the louvers at its angle and even areas at the opposite angle. The louvers are very small, from [0,75] 0.75 to [1,5] 1.5 millimetre, but the louvers are very efficient for the heat transfer capacity.

Rewrite the paragraph beginning on page 1, line 26, to read as follows:

When cooling medium, as air or water, is passing the fins, cooling medium is forced to flow in accordance with a flow pattern defined by the louvers. At low cooling medium flow levels, the flow has in spite of louvers space enough to go directly through the fins. On the contrary, at moderate or high cooling medium flow levels, the flow has to be redirected several times when passing the fins. This means more costs because of energy loss and this effect can be measured as a higher pressure drop over the heat exchanger.

Rewrite the paragraph beginning on page 4, line 16, to read as follows:

In Figs. 3a and 3b positions of louvers 12 in a fin 11 and the fin 11 to the longitudinal direction 13 (shown as an arrow) of a circulating element 14 are illustrated. An angle of a louver 12 to the [longitudinal] direction of the [circulating element 14] fin 11 is essentially equal to an angle of a fin 11 to the longitudinal direction of the circulating element 14. The direction of the fin 11 is essentially the same in the essentially whole breadth 15 of the circulating element 14. The fins 11 are positioned substantially parallel to each other. [The figure] Fig. 3b illustrates the angle B of one individual fin 11 relating to the circulating element 14 and the angle C of one individual louver 12 relating to the surface of the fin 11.

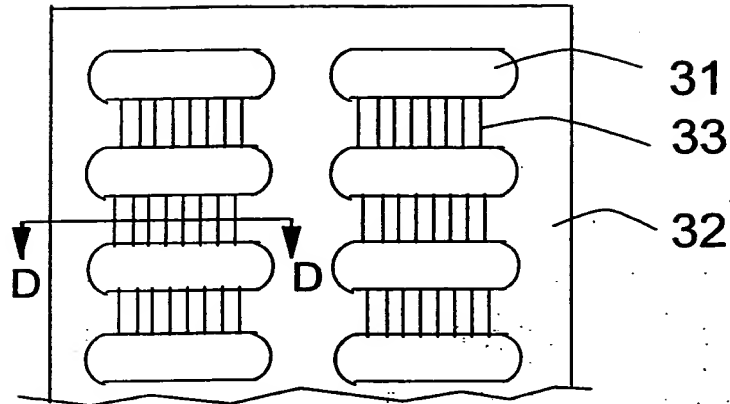


Fig. 5a

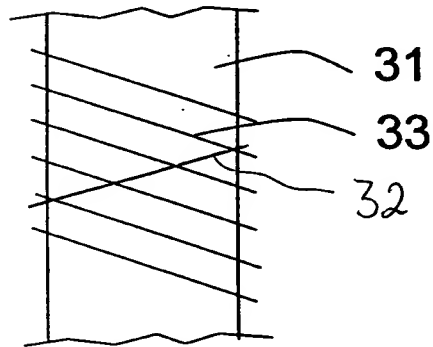


Fig. 5b